

**Minutes of Meeting #23 held as a Teleconference of RTCA SC-186 Working Group 3
for the Maintenance of the ADS-B 1090 MHz Extended Squitter MOPS
Held 1 November 2007 at 1:00pm EDT
<http://adsb.tc.faa.gov/WG3.htm>**

The Teleconference was called to order by Working Group Co-Chair Thomas Pagano of the FAA Technical Center at about 1:05pm, 1 November 2007. Mr. Pagano welcomed all attendees and asked that each attendee introduce themselves and their organization. The participants during all or part of the Teleconference included:

Larry Bachman, JHU-APL	Al Marshall, Sensis Corp.	Stuart Searight, FAA Tech Center
Gary Furr, Engility Corp, FAA TC	James Maynard, Garmin AT	Charles Sloane, FAA AIR-130
Carl Jezierski, FAA Tech Center	Dean Miller, Boeing ATM	Jim Troxel, L-3 / ACSS
Ian Levitt, Engility Corp, FAA TC	Tom Pagano, FAA Tech Center	Don Walker, Honeywell International
Robert Manning, DCS Corp	Kurt Schueler, Garmin International	

1. Tom Pagano began the Teleconference by discussing the reasons for the initiation of a draft of “Change 3 to DO-260A.” He indicated that an operational requirement has been brought to the attention of SC-186 by the RTCA and Eurocae Requirements Focus Group (RFG) in which they have identified a need to have the Mode A Code broadcast worldwide for a period of time during the initial implementation phases of the ADS-B systems in different parts of the world. The RFG requested that a change be made to DO-260A removing the restriction of the geographic filter on the broadcast of the Mode A Code in the 1090ES ADS-B TEST Message (TYPE=23, Subtype=7). Tom also pointed out that Gary Furr has been maintaining a running list of items that have been discovered since the publication of “Change 2 to DO-260A” which identify several problems with MOPS test procedures, and items that have been specified as needing to be changed in order to bring the 1090ES MOPS into compliance with changes that have been made to the ICAO 1090ES SARPs. The draft of “Change 3 to DO-260A” that is to be reviewed during this Teleconference is the result of all of these items coming together.

Tom indicated that this RFG request to SC-186 for a DO-260A change resulted in a 3 August 2007 SC-186 Plenary direction to WG-3 to draft Change 3, and further direction to WG-3 to present a final review and comment version of that change document during the SC-186 Plenary in Melbourne Florida in January 2008 for RTCA publication in Q1 2008.

However, Tom also pointed out that several issues had been raised during the RTCA SC-186 Plenary on 5 October 2007 in Washington DC that might require a delay in the publication of Change 3 to DO-260A. One of these items included an issue paper that is being presented during this Teleconference by Dean Miller from Boeing regarding the NIC, SIL and VPL parameters that were changed in “Change 2 to DO-260A” as well as in several other ADS-B change documents in December 2006.

2. After Tom Pagano concluded his introductory remarks, he indicated that the next order of business on the Agenda was to step through the current draft of “Change 3 to DO-260A.” Gary Furr referred the attendees to their copies of Working Paper 1090-WP23-02 which contains the current draft of Change 3 to DO-260A. Gary stepped through each individual

change and described the reason why there needed to be any change. There was discussion on several points and some minor typographical errors were pointed out by attendees.

3. Next, the Working Group turned to Working Paper 1090-WP23-03 which contained a discussion on several MOPS test procedures by Jim Troxel of L-3/ACSS. Jim stepped through each of the suggested changes to individual test procedures in the DO-260A test procedure performance section (2.4) as well as in the environmental section (2.3). After some discussion, Tom Pagano indicated that each manufacturer should review the suggested changes in detail prior to the next Working Group Teleconference and the next draft of Change 3 to DO-260A, and submit any comments back to Jim and/or to Gary Furr for distribution to, and for the consideration of, the full Working Group.
4. The Working Group then began a review of Working Paper 1090-WP23-04, which contained a discussion of issues with the NIC, SIL and VPL parameters by Dean Miller of Boeing ATM. Dean pointed out that an initial version of this Working Paper had been presented to the RTCA SC-186 Plenary on 5 October 2007 in Washington DC, and that a separate Ad Hoc group had been established to review the issue and come back to the January 2008 SC-186 Plenary with a recommendation. Additionally, Don Walker indicated that as part of that Ad Hoc Group, he had held discussions on this topic with Bruce Decleene of the FAA AIR-130 and that Don will work with Dean to prepare a summary of the issues and to make a recommendation back to the Working Group based on the discussions with AIR-130. The bottom line of the AIR-130 discussions was that they had no problem with removing the connection of VPL with NIC and SIL. If this is the recommendation of the SC-186 Plenary, then changes will have to be made again to the ASA and ADS-B MASPS, and to the 1090ES, UAT and STP MOPS, as well as recommending changes to the UAT and 1090ES ICAO SARPs. Tom Pagano indicated that he felt that this issue would not be resolved prior to the SC-186 Plenary in January 2008, which supports his conclusion that the publication of the “Change 3 to DO-260A” will be delayed until after that Plenary.
5. Finally, Gary Furr presented Working Paper 1090-WP23-05, which was an overview of the changes that could potentially be made to DO-260A in Change 3 for adding the definition, formats and requirements for the broadcast of the TCAS RA Message on 1090 MHz. The effort to establish a broadcast of this TCAS RA information on 1090 MHz was started over four years ago at the ICAO level and the specifications for the format and requirements of the TCAS RA Message is being published in the “*Mode S and Extended Squitter Technical Detailed Requirements, ICAO Document 9871.*” Prior to the publication of “Change 2 to DO-260A” in December 2006, it had been agreed by the SC-186 Plenary that this information would not be specified for the 1090ES MOPS until the actual update work was performed for DO-260B. However, since there is now a reason to publish “Change 3 to DO-260A,” it was felt that we have an opportunity to insert the details of the formats and requirements for informational purposes only, just in case that manufacturers want to go ahead and implement the message set in preparation for the fact that it is known that the USA and Europe will require the broadcast of the message in the future. It was agreed that a “Letter to Manufacturers” would be sent after this Teleconference for the purpose of soliciting the approval or disapproval of each 1090ES manufacturer for the implementation of the needed changes to DO-260A for informational purposes only. The Letter will make it clear that unless all manufacturers agree to add the needed changes, that no changes would be entered in the 1090ES MOPS until the publication of DO-260B, which could be five to

seven or more years in the future. ***As an add-on comment to these Minutes, the Letter to Manufacturers was sent out after the Teleconference, and all Manufacturers replied positively with regard to allowing the insertion of all of the requirements, test procedures and formats for the 1090ES TCAS RA Message to be specified in “Change 3 to DO-260A.” It will therefore be the position of WG-3 going into the SC-186 Plenary in January 2008 that Change 3 will include these TCAS RA Message specifications. Gary Furr will begin work to specify each of the proposed changes to DO-260A that will need to be considered to accomplish this task.***

6. As additional business, Tom Pagano described a brief email that had been received by Gary and Tom from Dr. William Harman of MIT prior to the Teleconference, indicating that Bill has a concern over the specification of requirements in Appendix A for the forbidding of the situation where T=0 and Non-Precision is specified. After a brief discussion in the Working Group, it was agreed that a response would be sent back to Dr. Harman indicating that a more detailed analysis of the problem should be specified and that he should prepare a Working Paper for the next Working Group Teleconference, specifying any proposed changes to DO-260A, and prior to any decision being made as to whether or not this was a good idea for a MOPS change.
7. With these discussions concluded, Tom Pagano thanked each attendee to the Teleconference and indicated that consideration would be made for another Working Group Teleconference after the New Year and prior to the RTCA SC-186 Plenary on 18 January 2008 in Melbourne Florida. Any notice would be sent out in late December if it is decided to hold the Teleconference at that time.
8. The **Working Papers** for all WG-3 Meetings, as well as the Meeting Agendas, Meeting Minutes, Meeting Schedules and proposed modifications to both DO-260 and DO-260A are posted on the ADS-B 1090 MHz web site maintained at the FAA William J Hughes Technical Center, located at: <http://adsb.tc.faa.gov/WG3.htm>